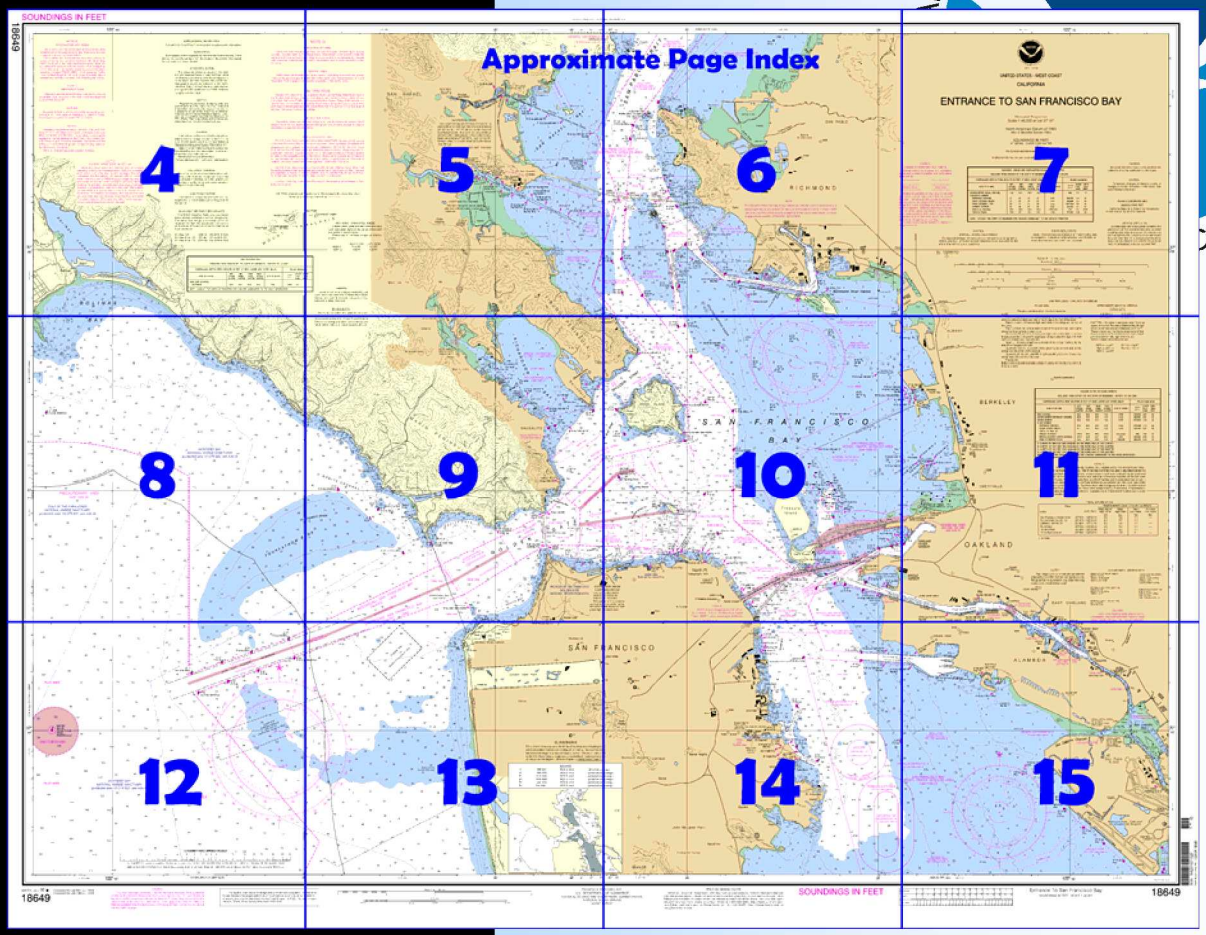
BookletChart™

Entrance to San Francisco Bay

(NOAA Chart 18649)

A reduced scale NOAA nautical chart for small boaters. When possible, use the full size NOAA chart for navigation.

- ☑ *Complete, reduced scale nautical chart*
- ☑ *Print at home for free*
- ☑ *Convenient size*
- ☑ *Up to date with all Notices to Mariners*
- ☑ *United States Coast Pilot excerpts*
- ☑ *Compiled by NOAA, the nation's chartmaker.*



Home Edition (not for sale)

Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
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What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

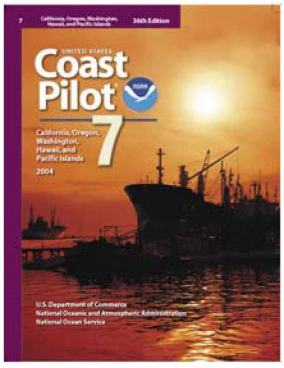
This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.



[Coast Pilot 7, Chapter 7 excerpts]

(78) **Bolinas Bay**, E of Duxbury Point, is an open bight 3.5 miles wide between Duxbury Point and Rocky Point. **Bolinas Lagoon** is separated from the bay by a narrow strip of sandy beach that is cut by a narrow shifting channel.

(79) **Rocky Point** is 100 feet high and shelving. Numerous detached rocks are within 200 yards of the high and precipitous cliffs on the S side of the point.

(81) **Point Bonita,** on the N side of the entrance to Golden Gate, is a sharp black cliff 100 feet high, increasing to 300 feet on its seaward face, 0.3 mile N. From NW it shows as three heads. **Point Bonita Light** (37°48.9'N., 122°31.8'W.), 124 feet above the water, is shown from a 33-foot white tower on the S head. A fog signal is at the light.

(82) **Bonita Cove,** E of Point Bonita, is occasionally used as an anchorage by small vessels. The anchorage is close under Point Bonita in about 36 feet.

(213) **Golden Gate,** the passage between the ocean and San Francisco Bay, is 2 miles wide at the W end between Point Bonita and Point Lobos, but the channel is reduced in width to 1.5 miles by Mile Rocks and to less than 0.7 mile by the Golden Gate Bridge pier.

(214) **Point Lobos,** the S entrance point to the Golden Gate, is high, rocky, and rounding with black rugged cliffs at its base. A large water tank is on the summit. The **Cliff House** is near the S part of the W face of the point; high and rocky **Seal Rocks** are just offshore.

(215) **Mile Rocks,** 700 yards NW of the sharp projecting point off **Lands End** on the N face of Point Lobos, are two small 20-foot-high black rocks about 100 feet apart. **Mile Rocks Light** (37°47.6'N., 122°30.6'W.), 49 feet above the water, is shown from an orange and white horizontally banded tower on the outer and larger rock; a fog signal is at the light.

(216) Passage between Mile Rocks and Point Lobos should not be attempted because of the covered and visible rocks extending over 300 yards from shore and the rocks covered 6 and 14 feet S of Mile Rocks Light.

(217) The S shore of the Golden Gate extends in a gentle curve NE for 2 miles to Fort Point, forming a shallow bight called **South Bay.** The cliffs rise abruptly from narrow beaches, except near the middle of the bight where a valley terminates in a sand beach 0.3 mile long. Sailing craft are sometimes obliged to anchor here when becalmed, or when meeting an ebb current, to avoid drifting onto Mile Rocks, but the anchorage is uncomfortable and it is difficult to get underway from it.

(218) **Fort Point** projects slightly from the high cliffs and is marked by a square red brick fort with a stone seawall in front. The fort, which is obscured by the S end of the Golden Gate Bridge, and 29 acres of land adjacent to the fort are part of the Fort Point National Historic Site. The fishing wharf at Fort Point is unsafe for mooring because of surge conditions.

(220) **Point Diablo,** 1.4 miles E of Point Bonita, rises abruptly from a 0.1-mile sharp projection to a height of over 200 feet with deep water on all sides. A light is shown from a white house on the end of the point; a fog signal is at the light.

(222) **Lime Point,** 2.5 miles E of Point Bonita, is high and precipitous, and rises abruptly to a height of nearly 500 feet in less than 0.3 mile. A light is shown from a pole at the end of the point; a fog signal is at the light.

(223) **Golden Gate Bridge,** crossing the Golden Gate from Fort Point to Lime Point, has a clearance of 225 feet at the center of the 4,028-foot-wide channel span between the 740-foot-high supporting towers; the least clearance is 211 feet at the S pier. The center of the span is marked by a fixed green light with three fixed white lights in a vertical line above it and by a private fog signal; a private light and fog signals are on the S pier. When approaching Golden Gate Bridge in the eastbound traffic lane in fog, channel Buoy 2 sometimes provides a radar image that indicates the location of the S pier of the bridge. Aero obstruction lights mark the tops of the bridge towers. (Do not rely on radiobeacon bearings when within 0.5 mile of the bridge.)

(228) From N, coasters and other vessels use buoyed **Bonita Channel,** between the E end of Potatopatch Shoal and the shore N of Point Bonita. The channel is narrowed to 0.2 mile by several rocky patches including **Sears Rock,** covered 19 feet, 1.2 miles NW of Point Bonita.

(419) **Berkeley Yacht Harbor,** on the N side of the long pier, is protected at the entrance by two detached breakwaters. The S breakwater is marked by a light on the S end, a light at the center, and a light and fog signal at the N end. The N breakwater is marked by a light on the NE and SW ends. The N side of the entrance into the harbor is marked by a private light, and the S side by a private light and fog signal.

(425) **Richmond Harbor,** on the E shore of San Francisco Bay 1.5 miles N of Southampton Shoal Light, includes the port facilities to Point San Pablo.

Table of Selected Chart Notes

CORTE MADERA CHANNEL
All aids to navigation are equipped with radar reflectors and are privately maintained.

Corrected through NM Dec. 05/09
Corrected through LNM Nov. 24/09

For Symbols and Abbreviations see Chart No. 1

Mercator Projection
Scale 1:40,000 at Lat 37° 51'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

RICHMOND - SAN RAFAEL BRIDGE

3 fixed white lights are mounted vertically over fixed green lights at the center of the main navigation channel spans.

Clearances of the main navigation channel spans:

	WEST CHAN	EAST CHAN
HOR CL	1000 FT	970 FT
VERT CL	185 FT	135 FT

RACING BUOYS

Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other private buoys are not all listed in the U.S. Coast Guard Light List.

SAN RAFAEL CREEK

The controlling depth was 3 feet for a mid-width of 50 feet from the channel entrance 37° 57' 30" N, 122° 27' 34" W, to the mouth of San Rafael Creek; thence 3 feet for a width of 30 feet to the turning basin, 4 feet in the turning basin centered at 37° 58' 08" N, 122° 31' 03" W, thence 2 feet for a width of 60 feet to the Grand Ave. Bridge, except for shoal to bare for last 125 feet.

Jan 2008

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

Station positions are shown thus:
⊙(Accurate location) o(Approximate location)

ARTICULATED AIDS

An articulated aid to navigation consists of a pipe structure that oscillates around a universal coupling connected to a sinker. The structure is kept upright by the buoyancy of a submerged flotation chamber. It is designed primarily to mark narrow channels in depths of up to 60 feet. All articulated aids are labelled *"Art"*.

HEIGHTS

Elevations of rocks, bridges, landmarks, and lights are in feet and refer to Mean High Water. Contour and summit elevation values are in feet and refer to Mean Sea Level.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Pipeline Area *Cable Area*

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

CAUTION

Fixed and floating obstructions, some submerged, may exist within the magenta tinted bridge construction area. Mariners are advised to proceed with caution.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.265" southward and 3.900" westward to agree with this chart.

NOTE S

Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices. Dumping subsequent to the survey dates may have reduced the depths shown.

NOTE Z

NO-DISCHARGE ZONE, 40 CFR 140

Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 11th Coast Guard District in Alameda, California or at the Office of the District Engineer, Corps of Engineers in San Francisco, California.

Refer to charted regulation section numbers.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

OAKLAND INNER HARBOR BRIDGES

FRUITVALE AVE RR LIFT BRIDGE
HOR CL 200 FT
VERT CL 13 FT DOWN
VERT CL 135 FT UP

FRUITVALE AVE BASCULE BRIDGE
HOR CL 97 FT
HOR CL 72 FT (OPEN)
VERT CL 15 FT

BROOKLYN BASIN FIXED BRIDGE
HOR CL 89 FT
VERT CL 11 FT

HIGH ST BASCULE BRIDGE
HOR CL 244 FT
HOR CL 129 FT (OPEN)
VERT CL 16 FT
(100 FT CENTER WIDTH)

PARK ST BASCULE BRIDGE
HOR CL 241 FT
HOR CL 139 FT (OPEN)
VERT CL 15 FT
(100 FT CENTER WIDTH)

CAUTION

BASCULE BRIDGE CLEARANCES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

SOURCE DIAGRAM

The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

COLREGS: International Regulations for Preventing Collisions at Sea, 1972.
Demarcation lines are shown thus: ————

NOTE E

The City of Richmond is requesting vessels use extreme caution when turning or anchoring in the vicinity of their 72" diameter sewer pipeline which is located 4700 feet offshore of Point Richmond at a depth of 26 feet below mean lower low water in approximate position 37°54'47"N, 122°25'06"W.

DEEP WATER ROUTE

Vessels with a draft of 45 feet or greater should use the "Deep Water Route" east of the Golden Gate Bridge. Vessels intending to use the Deep Water Route should notify San Francisco Traffic before passing Mile Rocks. Deep draft vessels will neither meet nor overtake in the Deep Water Route. Deep draft vessels bound for anchorage 9 should pass east of Blossom Rock then through the C-D or D-E span of the San Francisco-Oakland Bay Bridge.

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

TRAFFIC LANES

Traffic lanes are intended for use by vessels 1600 gross tons and over; arrows indicate the approximate direction flow within each lane. The provisions of Inland Navigation Rule 9 apply to all vessels navigating in the traffic lanes.

NOTE X

Within the 12-nautical mile Territorial Sea, established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the outer limit of the territorial sea, is retained as it continues to depict the jurisdictional limit of the other laws. The 9-nautical mile Natural Resource Boundary off the Gulf coast of Florida, Texas, and Puerto Rico, and the Three Nautical Mile Line elsewhere remain in most cases the inner limit of Federal fisheries jurisdiction and the outer limit of the jurisdiction of the states. The 24-nautical mile Contiguous Zone and the 200-nautical mile Exclusive Economic Zone were established by Presidential Proclamation. Unless fixed by treaty or the U.S. Supreme Court, these maritime limits are subject to modification.

VESSEL TRAFFIC SERVICE

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the San Francisco Bay and surrounding areas. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot, and/or the VTS User's Manual. Mariners should consult these sources for applicable rules and reporting requirements. Although mandatory VTS participation is limited to the navigable waters of the United States, certain vessels are encouraged or may be required, as a condition of port entry to report beyond this area to facilitate advance vessel traffic management within the VTS area.

The U.S. Coast Guard operates a Vessel Traffic Service Offshore Vessel Movement Reporting System covering the seaward approaches to San Francisco Bay. Vessels are requested to monitor VTSSF on Channel 12 at 15 and 45 minutes past each hour for broadcast reports of known shipping traffic in the area.

All of San Pablo Bay is within the VTS area with the exception of the Petaluma River Entrance Channel.

TIDAL INFORMATION

PLACE		Height referred to datum of soundings (MLLW)		
NAME	(LAT/LONG)	Mean Higher High Water	Mean High Water	Mean Low Water
		feet	feet	feet
Oakland Inner Harbor	(37°48'N/122°17'W)	6.5	5.8	1.1
Point Orient	(37°57'N/122°25'W)	6.0	5.4	1.1
San Francisco (Golden Gate)	(37°48'N/122°28'W)	5.8	5.2	1.1
Rincon Point, Pier 22 ½	(37°47'N/122°23'W)	6.3	5.7	1.1
Hunters Point , California	(37°44'N/122°21'W)	6.7	6.1	1.1
Yerba Buena Island	(37°49'N/122°22'W)	6.2	5.5	1.1

NOTE:
Dashes (- - -) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from http://tidesandcurrents.noaa.gov.

(Sep 2009)

SAN FRANCISCO BAY

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO MAR 2008

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)						PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
MAIN SHIP CHANNEL:								
ENTRANCE	50.0	54.0	55.0	53.0	3-08	2000	4.3	55

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

SOUNDINGS IN FEET

18649

1 370 000 122° 40' 35'

550 000

NOTE B
PRECAUTIONARY AREA

Traffic lanes and the associated precautionary area established at the approachs to San Francisco Bay are completely shown on Chart 18645.

Traffic within the Precaut onary Area may consist of vessels making the trans tion between the Main Ship Channel and one of the established traffic lanes. Mariners are advised to exercise extreme caution when navigating within this area. The normal cruising area of the pilot vessel is indicated "PILOT AREA." When passing Traffic Lane Lighted Buoys "S", "W", or "N", inbound vessels should contact the pilot boat on channel 13 for boarding instructions.

NOTE C
SEPARATION ZONE

Mariners are requested to stay outside the circular separation zone centered on the San Francisco Approach Lighted Horn Buoy SF.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 11th Coast Guard District in Alameda, California or at the Office of the District Engineer, Corps of Engineers in San Francisco, California.

Refer to charted regulation section numbers.

NOTE Z
NO-DISCHARGE ZONE, 40 CFR 140

Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. All vesse s with an installed marine san tation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are conta ned in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 7 for important supplemental information.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.265" southward and 3.900" westward to agree with this chart.

NOTE S

Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices. Dumping subsequent to the survey dates may have reduced the depths shown.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcast ng stations are subject to error and should be used with caution.

Station positions are shown thus:
⊙(Accurate location) ○(Approximate location)

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Mt. Pise, CA	KHB-49	162.400 MHz WX2
Mt. Umunhum, CA	KEC-49	162.550 MHz WX1
Mt. Umunhum, CA	WWF-64	162.450 MHz WX5

PREC
Traffic within the Precaut onary
courses. Vessels transiting the Prec
centerline of the area to port provid
within the area. Mariners are adv se
this area.

TF
Traffic lanes are intended for u
indicate the approximate direction
Navigation Rule 9 apply to all vess

DEE
Vessels with a draft of 45 feet or
the Golden Gate Bridge. Vessels
notify San Francisco Traffic befor
ne ther meet nor overtake in the D
anchorage 9 should pass east of Bl
the San Francisco-Oakland Bay Br

REC
Recreation areas are intended
areas should not be used by vess
emergency or special circumstanc

VESSE
The U.S. Coast Guard operates a
in the San Francisco Bay and sur
designated radiotelephone frequenc
Pilot, and/or the VTS User's Manua
applicable rules and reporting requ
is limited to the navigable waters of t
or may be required, as a conditio
facilitate advance vessel traffic m

The U.S. Coast Guard operates a
Reporting System covering the seav
are requested to monitor VTSSF on
for broadcast reports of known

All of San Pablo Bay is within the
Entrance Channel.

COLREGS: International Regula
Demarcation lines a

East

Middle Peak 2300
West Peak 2500
DOME (HIGHER OF TWO)
MOUNT TAM

SAN FRANCISCO BAY TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO MAR 2006								
CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)						PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
MAIN SHIP CHANNEL: ENTRANCE	50.0	54.0	55.0	53.0	3-08	2000	4.3	55
NOTE CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION								

Joins page 8

18647

4

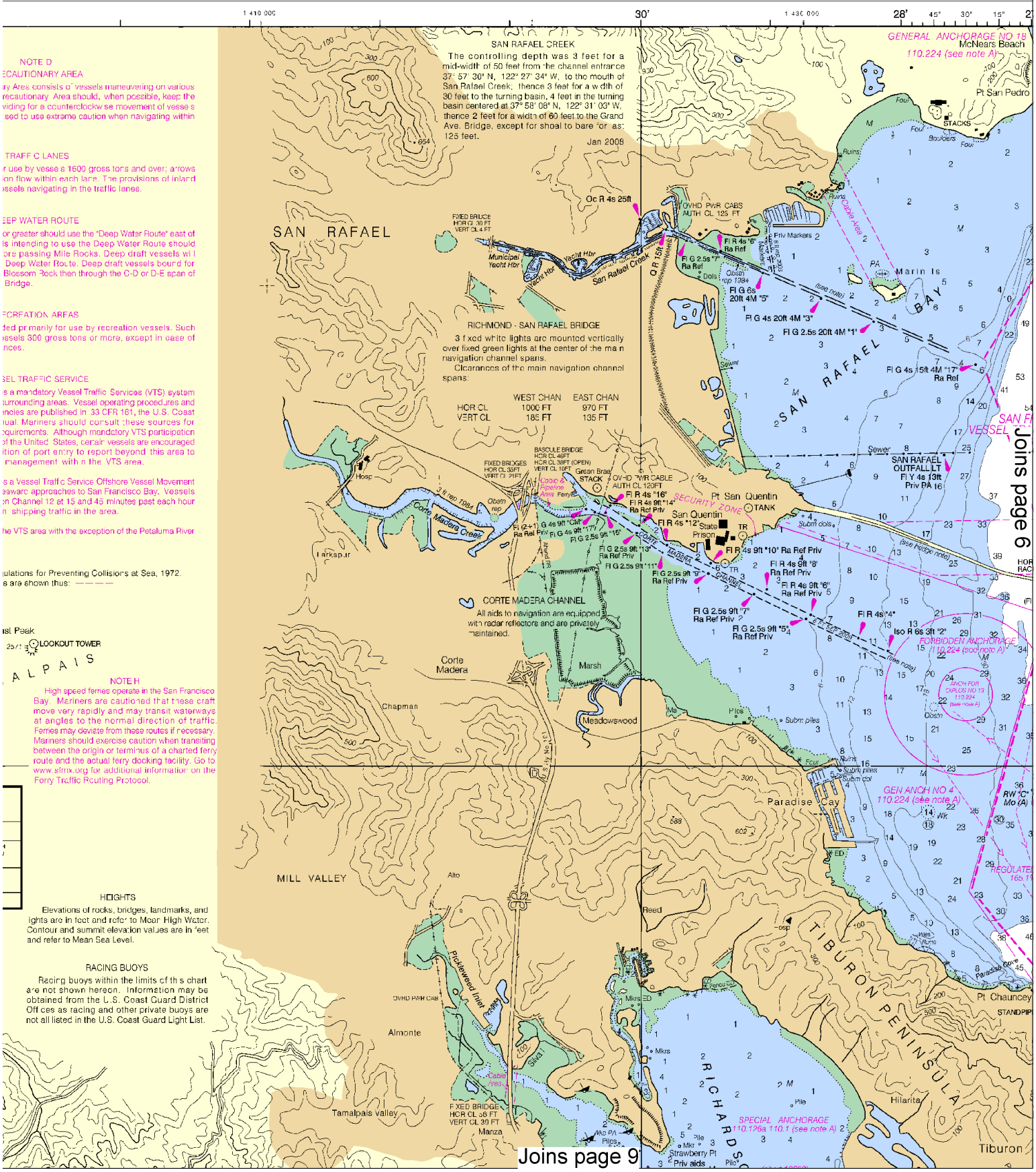
North

Printed at reduced scale. ~~SCALE 1:40,000~~

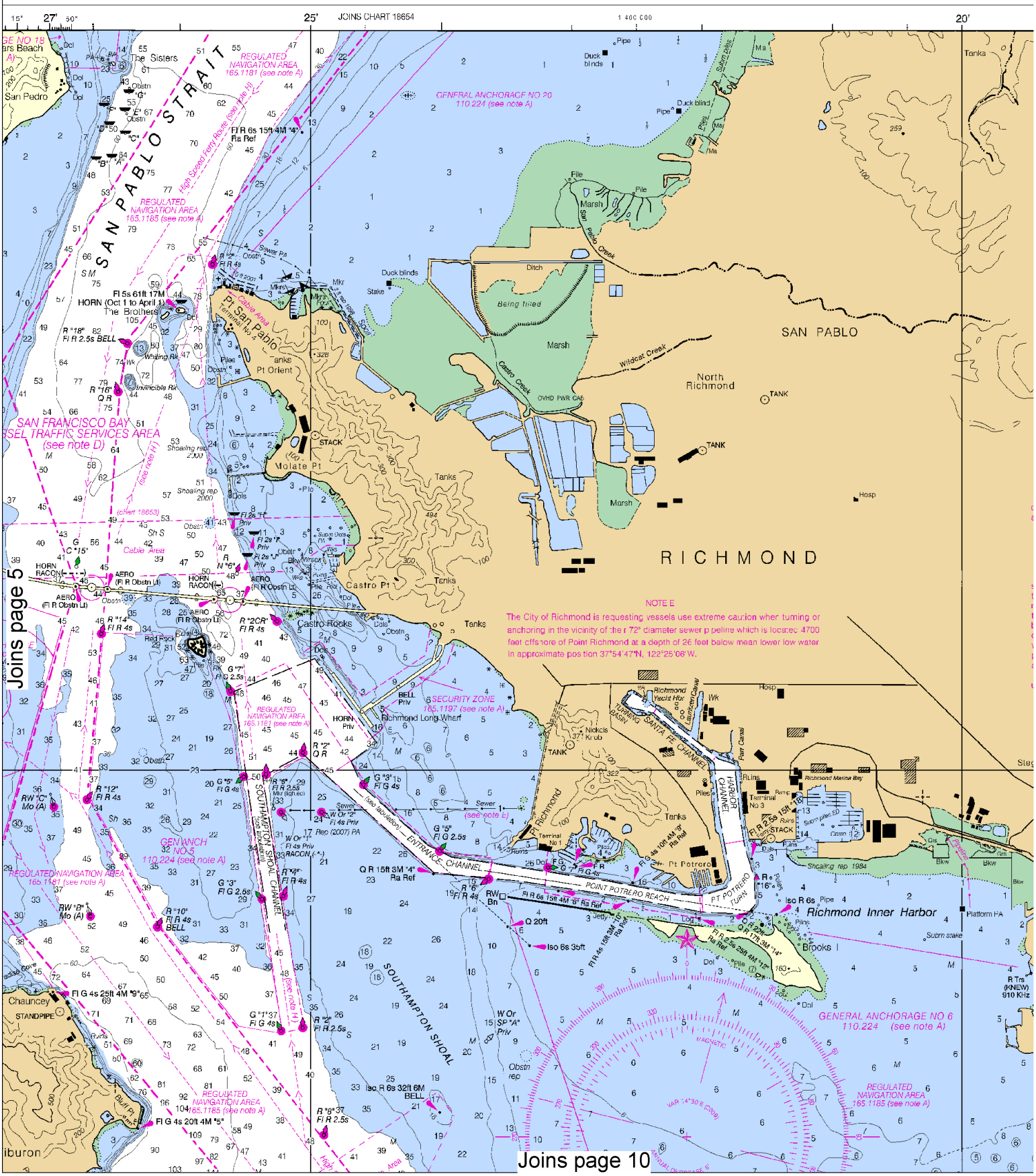
Nautical Miles: 1 ½ 0 1 2 3

Yards: 1000 0 1000 2000 3000 4000 5000

See Note on page 5.



This BookletChart was reduced to 70% of the original chart scale.
The new scale is 1:57143. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.



Printed at reduced scale. SCALE 1:40,000 See Note on page 5.

Nautical Miles: 1 ½ 0 1 2 3

Yards: 1000 0 1000 2000 3000 4000 5000

North

1 490 000 122° 15' 540 000

THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - WEST COAST

CALIFORNIA

ENTRANCE TO SAN FRANCISCO BAY

Mercator Projection
Scale 1:40,000 at Lat 37° 51'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

For Symbols and Abbreviations see Chart No. 1

Additional information can be obtained at nauticalcharts.noaa.gov.

CAUTION
SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Pipeline Area — Cable Area

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

RICHMOND HARBOR AND SOUTHAMPTON SHOAL CHANNEL DEPTHS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO SEP 2008

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)				DATE OF SURVEY	PROJECT DIMENSIONS		
	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER		WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
SOUTHAMPTON SHOAL CHANNEL	44	46	46	45	7-08	600	1.1	45
RICHMOND HARBOR								
ENTRANCE CHANNEL	35	37	36	36	6-08	600-550	1.0	35
POINT POTRERO REACH	36	36	36	35	6-08	500-600	1.4	35
POINT POTRERO TURN	36	37	37	36	6-08	600-1250	0.6	35
HARBOR CHANNEL	37	38	38	37	6-08	850-200	0.5	35
SANTA FE CHANNEL	27	29	29	26	1-08; 8-08	200	0.5	35-30
TURNING BASIN	27	28	27	21	9-08	200-500	0.16	30

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

PLANE COORDINATE GRID
(based on NAD 1927)

California State Grid, Zone 3, is indicated by dotted ticks at 10,000 foot intervals.

ARTICULATED AIDS

An articulated aid to navigation consists of a pipe structure that oscillates around a universal coupling connected to a sinker. The structure is kept upright by the buoyancy of a submerged flotation chamber. It is designed primarily to mark narrow channels in depths of up to 60 feet. All articulated aids are labelled "Art".

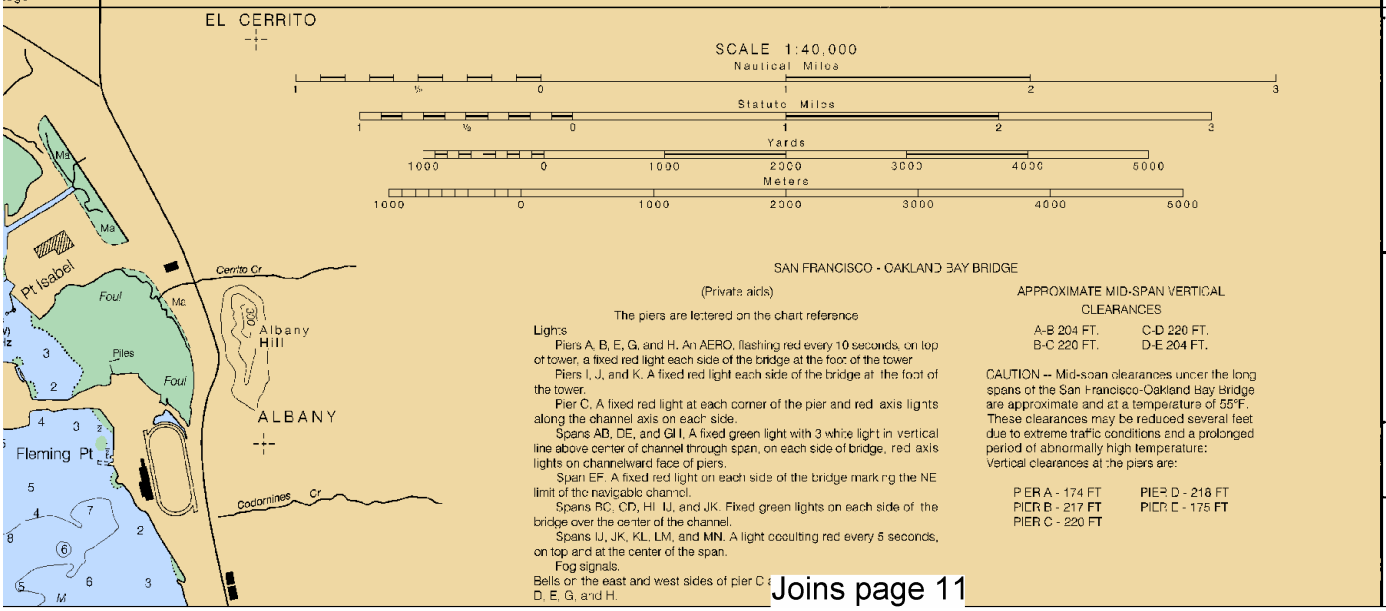
CAUTION
BASCULE BRIDGE CLEARANCES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

37° 55'



SAN FRANCISCO - OAKLAND BAY BRIDGE

(Private aids)

The piers are lettered on the chart reference

Lights

Piers A, B, E, G, and H. An AERO, flashing red every 10 seconds, on top of tower, a fixed red light each side of the bridge at the foot of the tower.

Piers I, J, and K. A fixed red light each side of the bridge at the foot of the tower.

Pier C. A fixed red light at each corner of the pier and red axis lights along the channel axis on each side.

Spans AB, DE, and GH. A fixed green light with 3 white light in vertical line above center of channel through span, on each side of bridge, red axis lights on channelward face of piers.

Span EF. A fixed red light on each side of the bridge marking the NE limit of the navigable channel.

Spans BC, CD, HI, IJ, and JK. Fixed green lights on each side of the bridge over the center of the channel.

Spans IJ, JK, KL, LM, and MN. A light occulting red every 5 seconds, on top and at the center of the span.

Fog signals.

Bells on the east and west sides of pier C and D, E, G, and H.

APPROXIMATE MID-SPAN VERTICAL CLEARANCES

A-B 204 FT.	C-D 220 FT.
B-C 220 FT.	D-E 204 FT.

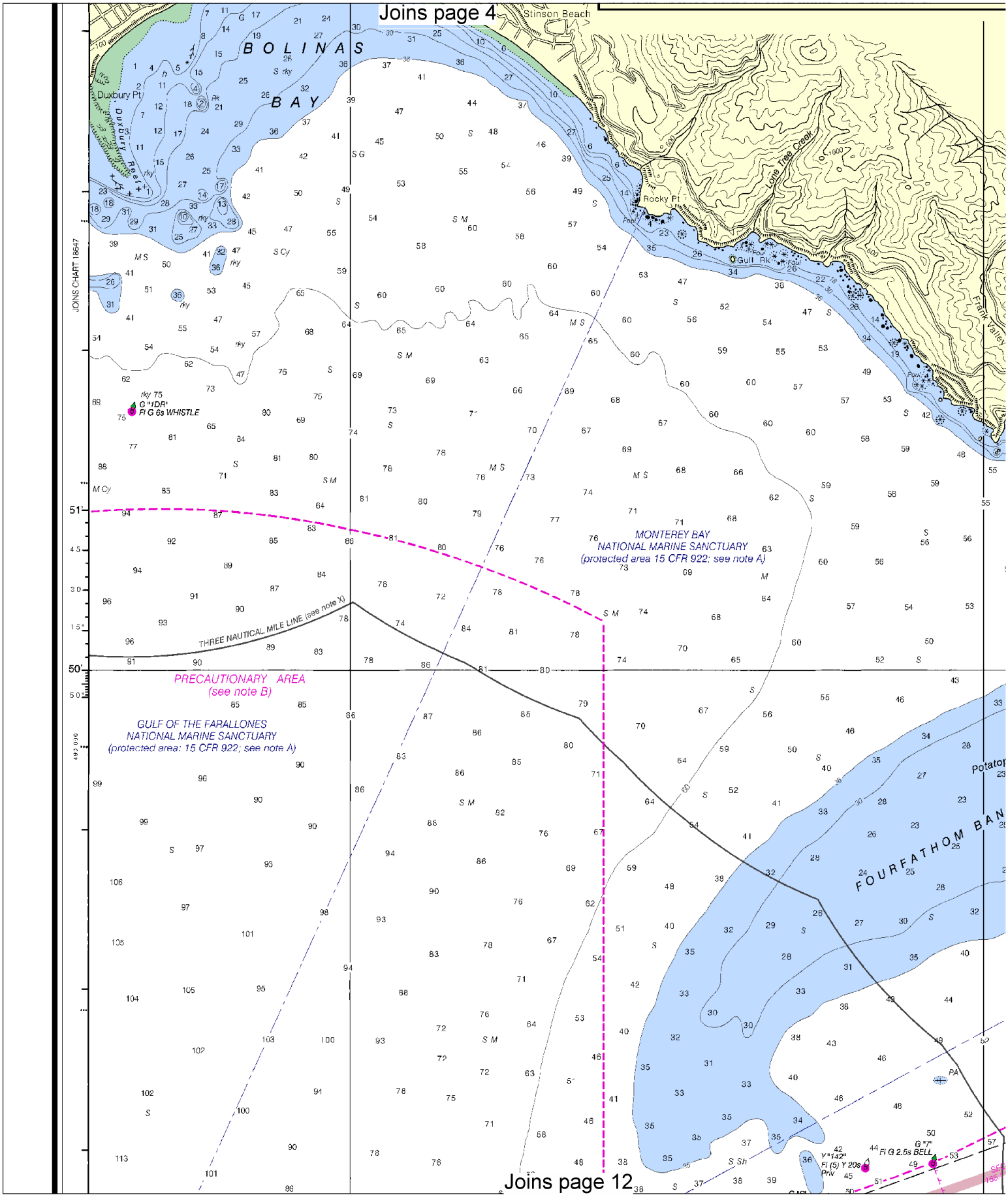
CAUTION -- Mid-span clearances under the long spans of the San Francisco-Oakland Bay Bridge are approximate and at a temperature of 55°F. These clearances may be reduced several feet due to extreme traffic conditions and a prolonged period of abnormally high temperature.

Vertical clearances at the piers are:

PIER A - 174 FT	PIER D - 216 FT
PIER B - 217 FT	PIER E - 175 FT
PIER C - 220 FT	

Joins page 11

This BookletChart has been updated with: Coast Guard Local Notice To Mariners: 0510 2/2/2010,
NGA Weekly Notice to Mariners: 0910 2/27/2010,
Canadian Coast Guard Notice to Mariners: n/a .



8

North

Printed at reduced scale. ~~SCALE 1:40,000~~

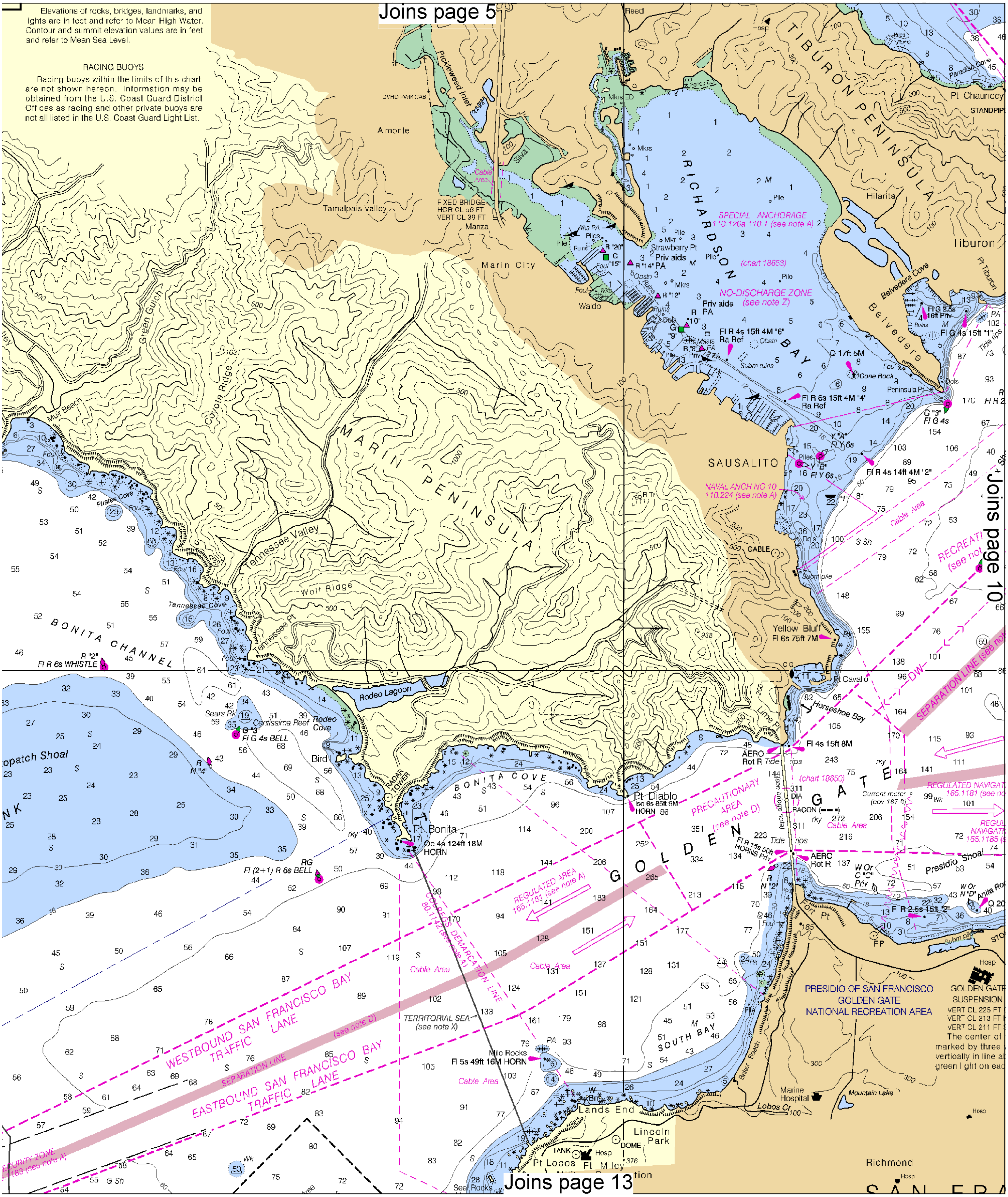
Nautical Miles

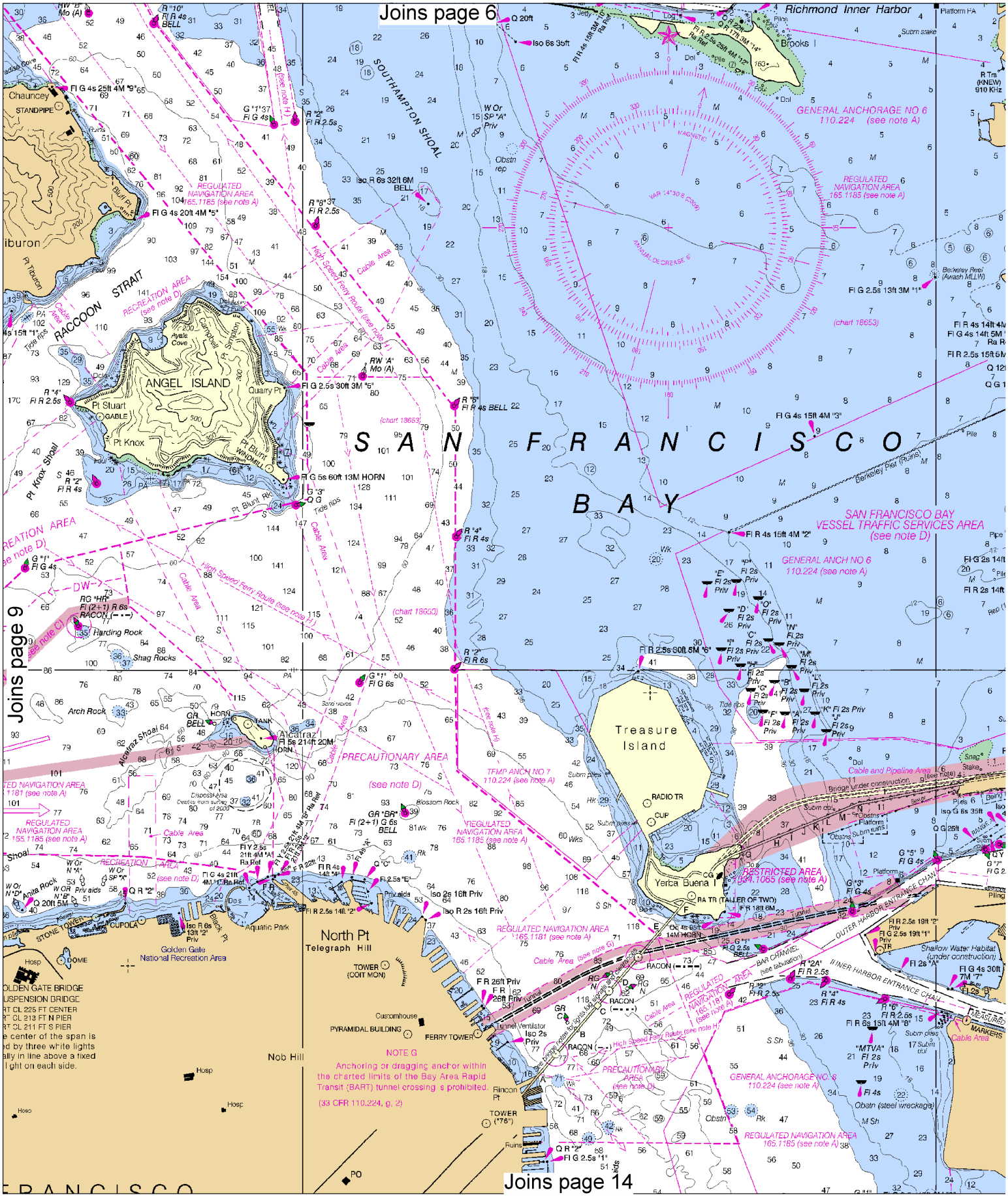
1 ½ 0 1 2 3

Yards

1000 0 1000 2000 3000 4000 5000

See Note on page 5.


Joins page 5
Joins page 10
Joins page 13
Elevations of rocks, bridges, landmarks, and lights are in feet and refer to Mean High Water. Contour and summit elevation values are in feet and refer to Mean Sea Level.
RACING BUOYS
Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other private buoys are not all listed in the U.S. Coast Guard Light List.
MARIN PENINSULA
TIBURON PENINSULA
RICHARDSON BAY
SPECIAL ANCHORAGE 110.126a 110.1 (see note A)
NO-DISCHARGE ZONE (see note Z)
SAUSALITO
Tiburon
Belvedere
Belvedere Cove
Strawberry Pt
Marin City
Tamalpais Valley
Almonte
Manza
Waldo
Muir Beach
Coyote Ridge
Green Gulch
Tennessee Valley
Wolf Ridge
Tennessee Cove
Tennessee Pt
Pirates Cove
BONITA CHANNEL
Rodeo Lagoon
Rodeo Cove
Bird I
Pt Bonita
BONITA COVE
Pt Diablo
Yellow Bluff
Pt Cavallo
Lime Pt
Horseshoe Bay
GOLDEN GATE
PRECAUTIONARY AREA (see note D)
REGULATED AREA 165.1181 (see note A)
WESTBOUND SAN FRANCISCO BAY TRAFFIC LANE
EASTBOUND SAN FRANCISCO BAY TRAFFIC LANE
SEPARATION LINE
TERRITORIAL SEA (see note X)
COLREGS DEMARCATION LINE 80.1142 (see note A)
Cable Area
Potatopatch Shoal
Centissima Reef
Sears Rk
Mile Rocks
SOUTH BAY
Lands End
Lincoln Park
Pt Lobos
Seal Rocks
Baker Beach
Fort Pt
Presidio Shoal
PRESIDIO OF SAN FRANCISCO GOLDEN GATE NATIONAL RECREATION AREA
Marine Hospital
Mountain Lake
Richmond
Cone Rock
Peninsula Pt
Pt Chauncey
Hilarita
Paradise Cove
NAVAL ANCH NO 10 110.224 (see note A)
GABLE
RADAR TOWER
Fl 4s 15ft 8M
Fl 6s 75ft 7M
Oc 4s 124ft 18M HORN
Fl 5s 49ft 16M HORN
Fl R 6s WHISTLE
Fl G 4s BELL
Fl (2+1) R 6s BELL



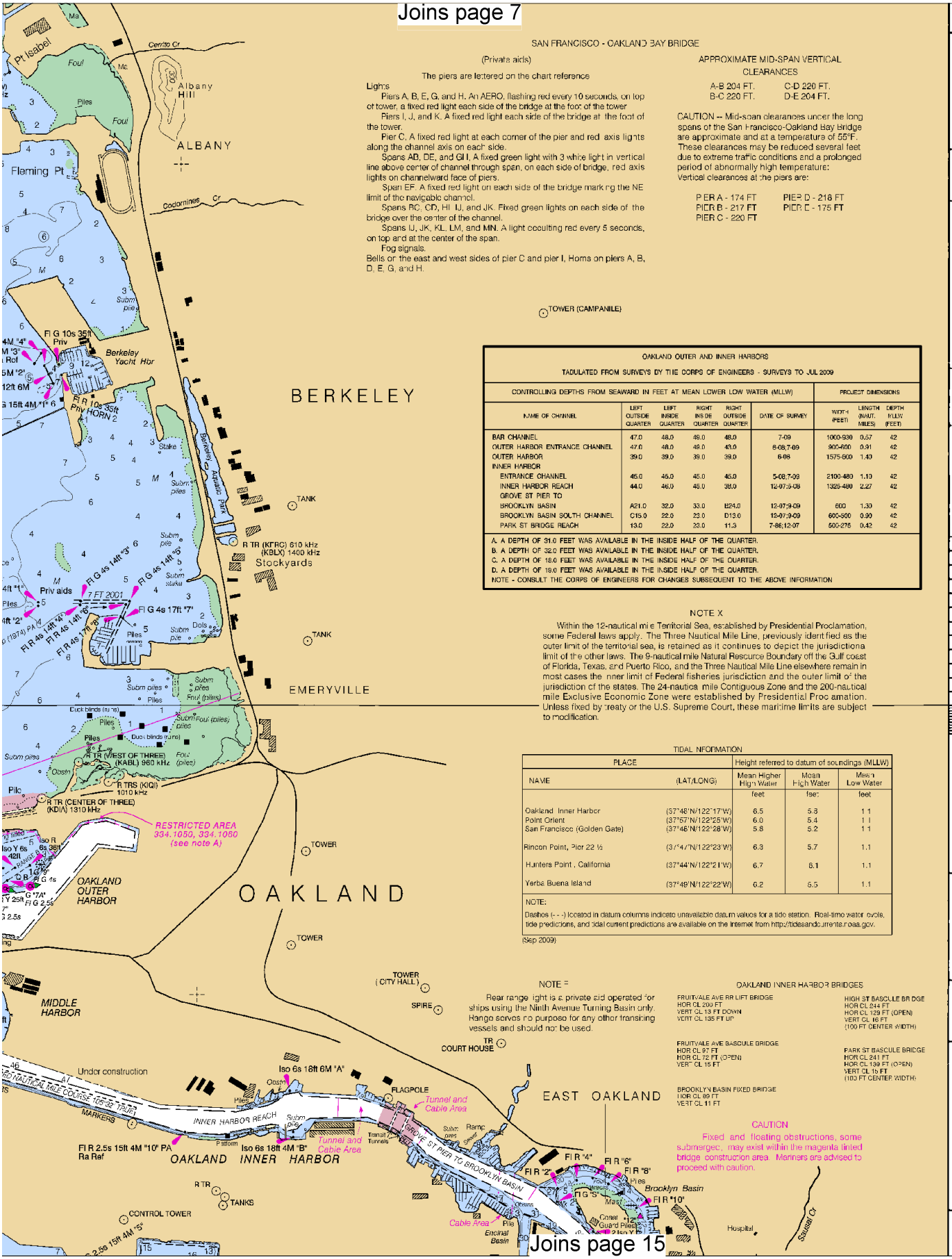
North

Printed at reduced scale. ~~SCALE 1:40,000~~ See Note on page 5.

Nautical Miles: 1 ½ 0 1 2 3

Yards: 1000 0 1000 2000 3000 4000 5000

Joins page 7



SAN FRANCISCO - OAKLAND BAY BRIDGE

(Private aids)

The piers are lettered on the chart reference

Lights

Piers A, B, E, G, and H. An AERO, flashing red every 10 seconds, on top of tower, a fixed red light each side of the bridge at the foot of the tower

Piers I, J, and K. A fixed red light each side of the bridge at the foot of the tower.

Pier C. A fixed red light at each corner of the pier and red axis lights along the channel axis on each side.

Spans AB, DE, and GI. A fixed green light with 3 white light in vertical line above center of channel through span, on each side of bridge, red axis lights on channelward face of piers.

Span EF. A fixed red light on each side of the bridge marking the NE limit of the navigable channel.

Spans BC, CD, HI, IJ, and JK. Fixed green lights on each side of the bridge over the center of the channel.

Spans IJ, JK, KL, LM, and MN. A light occulting red every 5 seconds, on top and at the center of the span.

Fog signals.

Bells on the east and west sides of pier C and pier I. Horns on piers A, B, D, E, G, and H.

APPROXIMATE MID-SPAN VERTICAL CLEARANCES

A-B 204 FT.	C-D 220 FT.
B-C 220 FT.	D-E 204 FT.

CAUTION -- Mid-span clearances under the long spans of the San Francisco-Oakland Bay Bridge are approximate and at a temperature of 55°F. These clearances may be reduced several feet due to extreme traffic conditions and a prolonged period of abnormally high temperature: Vertical clearances at the piers are:

PIER A - 174 FT	PIER D - 218 FT
PIER B - 217 FT	PIER E - 175 FT
PIER C - 220 FT	

TOWER (CAMPANILE)

OAKLAND OUTER AND INNER HARBORS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO JUL 2009

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW) LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
BAR CHANNEL	47.0	48.0	49.0	48.0	7-09	1000-930	0.57	42
OUTER HARBOR ENTRANCE CHANNEL	47.0	48.0	49.0	48.0	6-08;7-09	900-600	0.91	42
OUTER HARBOR	39.0	39.0	39.0	39.0	6-08	1575-600	1.40	42
INNER HARBOR								
ENTRANCE CHANNEL	45.0	45.0	45.0	45.0	5-08;7-09	2100-480	1.10	42
INNER HARBOR REACH	44.0	46.0	45.0	38.0	12-07;5-08	1325-480	2.27	42
GROVE ST PIER TO BROOKLYN BASIN	A21.0	32.0	33.0	B24.0	12-07;9-09	600	1.30	42
BROOKLYN BASIN SOUTH CHANNEL	C15.0	22.0	23.0	D13.0	12-07;9-09	600-500	0.90	42
PARK ST BRIDGE REACH	13.0	22.0	23.0	11.3	7-86;12-07	500-275	0.42	42

A. A DEPTH OF 31.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
B. A DEPTH OF 32.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
C. A DEPTH OF 18.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
D. A DEPTH OF 19.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

NOTE X

Within the 12-nautical mile Territorial Sea, established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the outer limit of the territorial sea, is retained as it continues to depict the jurisdictional limit of the other laws. The 9-nautical mile Natural Resource Boundary off the Gulf coast of Florida, Texas, and Puerto Rico, and the Three Nautical Mile Line elsewhere remain in most cases the inner limit of Federal fisheries jurisdiction and the outer limit of the jurisdiction of the states. The 24-nautical mile Contiguous Zone and the 200-nautical mile Exclusive Economic Zone were established by Presidential Proclamation. Unless fixed by treaty or the U.S. Supreme Court, these maritime limits are subject to modification.

TIDAL INFORMATION

PLACE NAME	(LAT/LONG)	Height referred to datum of soundings (MLLW) Mean Higher High Water feet	Mean High Water feet	Mean Low Water feet
Oakland Inner Harbor	(37°48'N/122°17'W)	6.5	5.8	1.1
Point Orient	(37°57'N/122°25'W)	6.0	5.4	1.1
San Francisco (Golden Gate)	(37°48'N/122°28'W)	5.8	5.2	1.1
Rincon Point, Pier 22 ½	(37°47'N/122°23'W)	6.3	5.7	1.1
Hunters Point, California	(37°44'N/122°21'W)	6.7	6.1	1.1
Yerba Buena Island	(37°49'N/122°22'W)	6.2	5.5	1.1

NOTE:
Dashes (- - -) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from http://tidesandcurrents.noaa.gov.

(Sep 2009)

NOTE =

Rear range light is a private aid operated for ships using the Ninth Avenue Turning Basin only. Range serves no purpose for any other transiting vessels and should not be used.

OAKLAND INNER HARBOR BRIDGES

FRUITVALE AVE RR LIFT BRIDGE
HOR CL 209 FT
VERT CL 13 FT DOWN
VERT CL 135 FT UP

FRUITVALE AVE BASCULE BRIDGE
HOR CL 97 FT
HOR CL 72 FT (OPEN)
VERT CL 15 FT

BROOKLYN BASIN FIXED BRIDGE
HOR CL 89 FT
VERT CL 11 FT

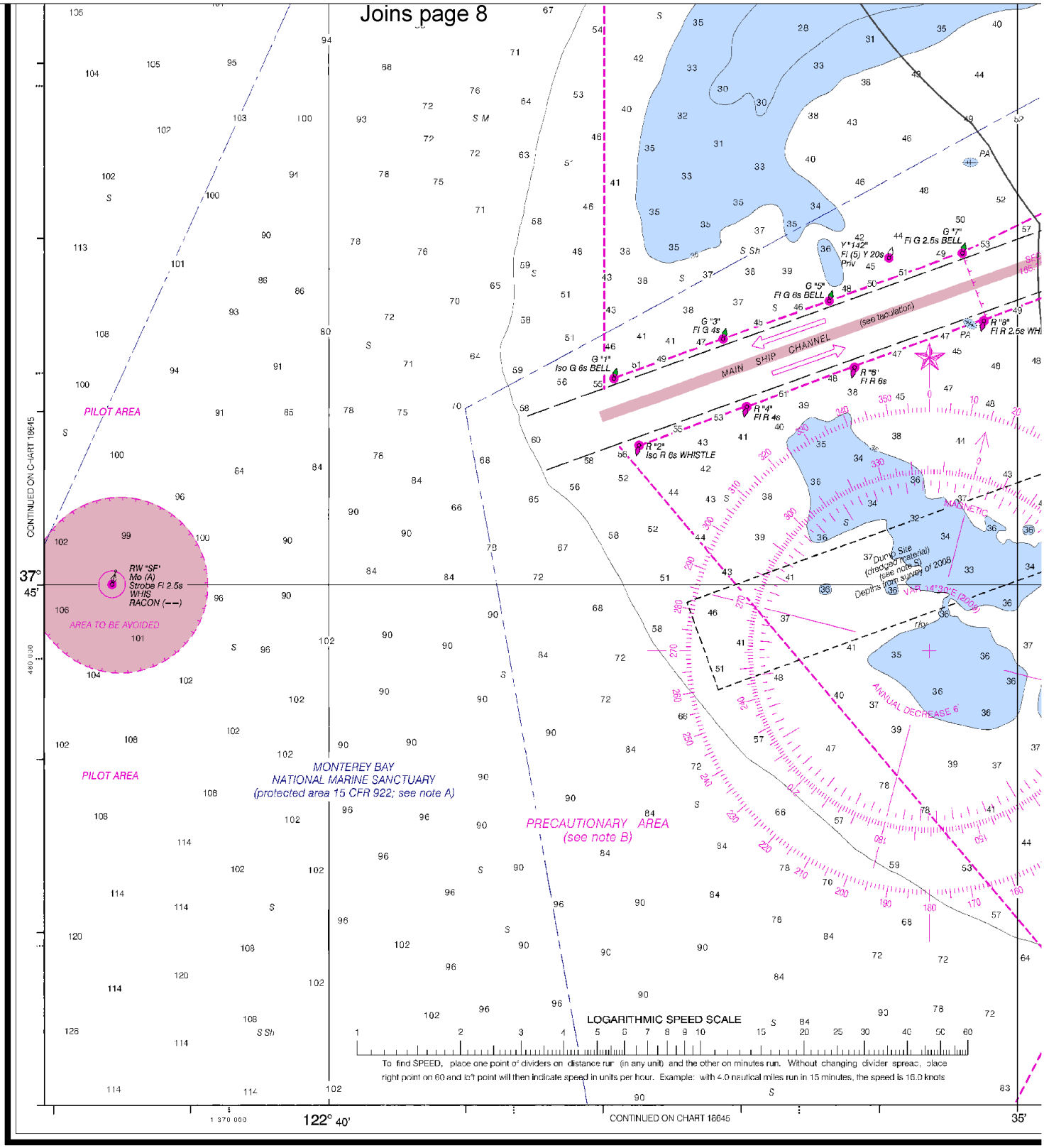
HIGH ST BASCULE BRIDGE
HOR CL 244 FT
HOR CL 129 FT (OPEN)
VERT CL 16 FT
(100 FT CENTER WIDTH)

PARK ST BASCULE BRIDGE
HOR CL 241 FT
HOR CL 139 FT (OPEN)
VERT CL 15 FT
(100 FT CENTER WIDTH)

CAUTION

Fixed and floating obstructions, some submerged, may exist within the magenta tinted bridge construction area. Mariners are advised to proceed with caution.

Joins page 15



67th Ed., Dec./09 ■ Corrected through NM Dec. 05/09
Corrected through LNM Nov. 24/09

18649

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

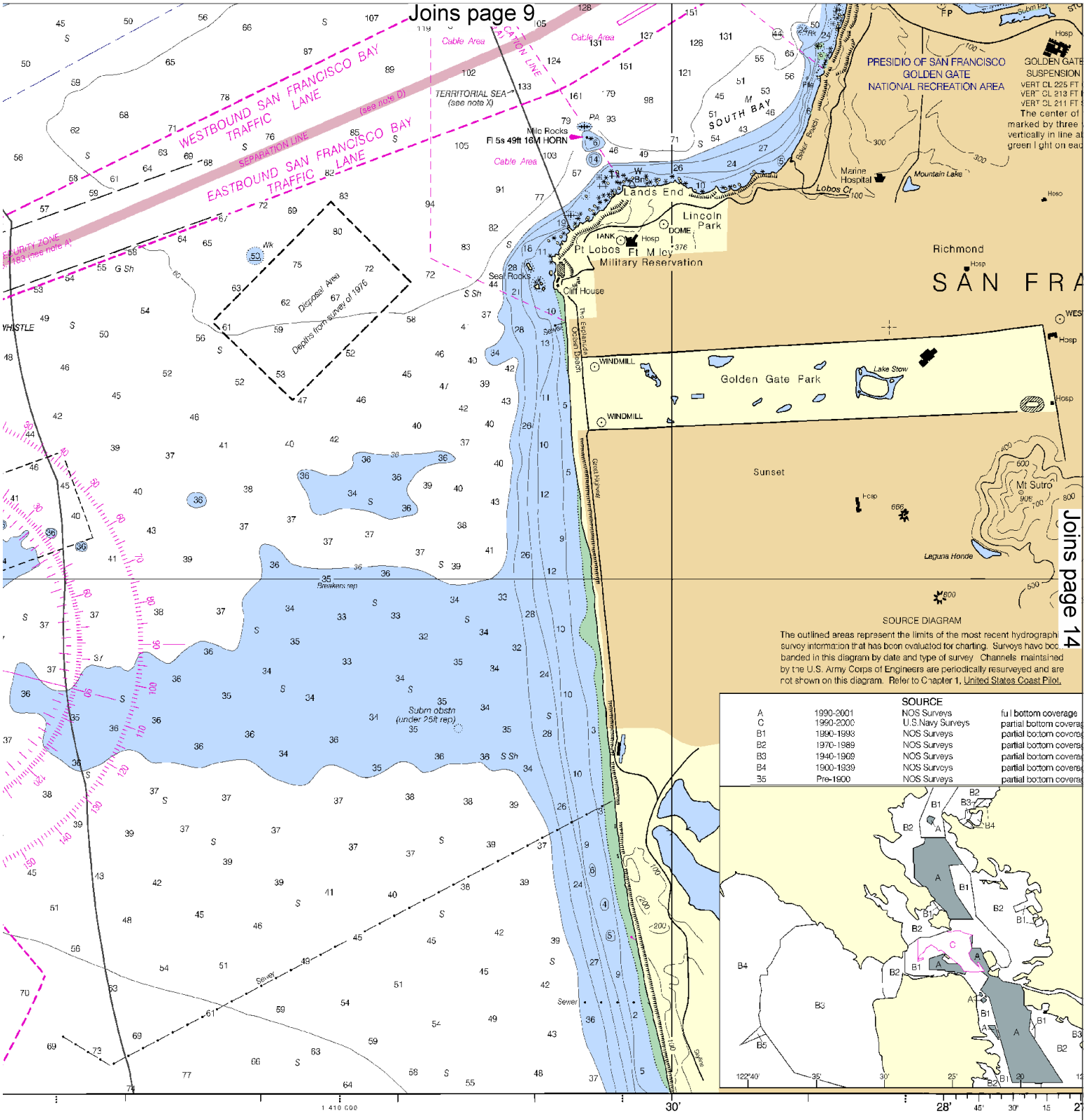
This nautical chart has been designed to promote safe navigation. The Nat Ocean Service encourages users to submit corrections, additions, or comment improving this chart to the Chief, Marine Chart Division (N/CS2), National O Service, NOAA, Silver Spring, Maryland 20910-3282.

North

Printed at reduced scale. ~~SCALE 1:40,000~~ See Note on page 5.

Nautical Miles: 1 ½ 0 1 2 3

Yards: 1000 0 1000 2000 3000 4000 5000



SCALE 1:40,000

Nautical Miles

1 ½ 0 1 2 3

Yards

1000 0 1000 2000 3000 4000 5000

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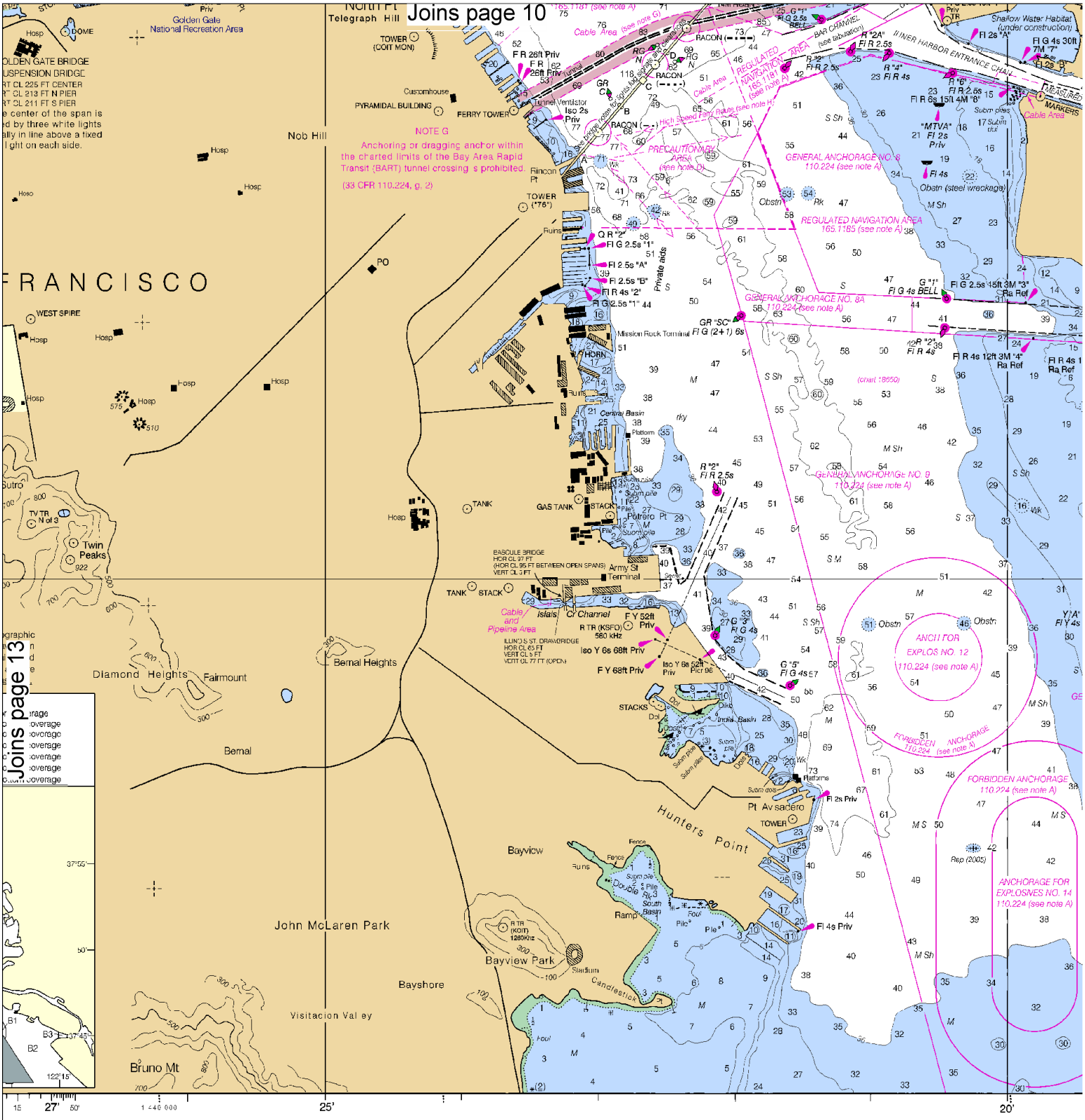

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NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, http://NauticalCharts.gov, help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, http://OceanGrafix.com, or help@OceanGrafix.com.

SOUNDINGS IN FEET

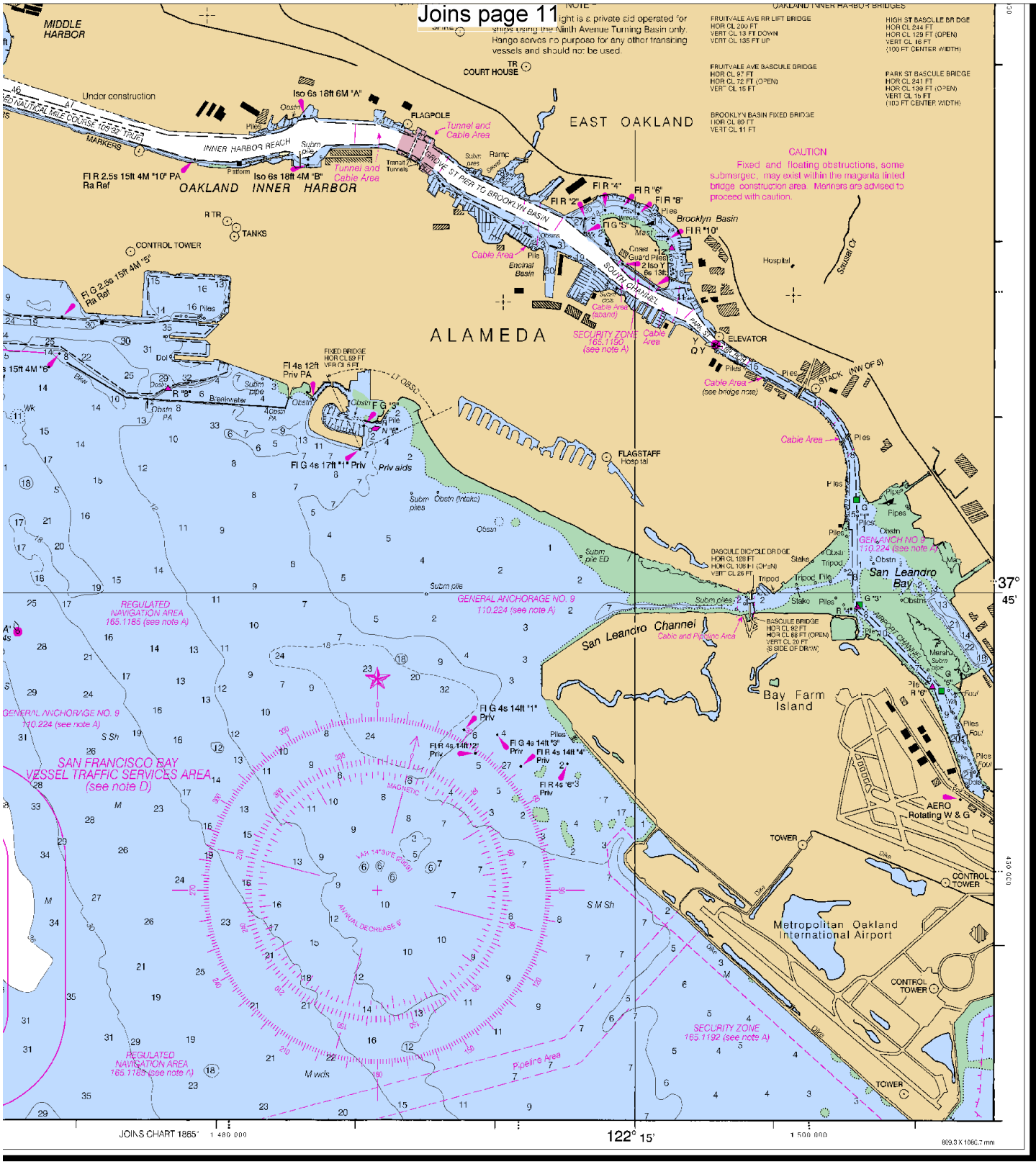
North

Printed at reduced scale. ~~SCALE 1:40,000~~

Nautical Miles: 1 ½ 0 1 2 3

Yards: 1000 0 1000 2000 3000 4000 5000

See Note on page 5.



FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102
METERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Entrance to San Francisco Bay

SOUNDINGS IN FEET - SCALE 1:40,000

18649

ED NO. 67

NSN 7642014011526 NGA REFERENCE NO 18AHA18649

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.
Channel 9 – Communications between boats and ship-to-coast.
Channel 13 – Navigation purposes at bridges, locks, and harbors.
Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 & 78A – Recreational boat channels.

Distress Call Procedures

1. Make sure radio is on.
2. Select Channel 16.
3. Press/Hold the transmit button.
4. Clearly say: "MAYDAY, MAYDAY, MAYDAY."
5. Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
6. Release transmit button.
7. Wait for 10 seconds – If no response Repeat MAYDAY Call.

HAVE ALL PERSONS PUT ON LIFE JACKETS !!

Mobile Phones – Call 911 for water rescue.
Coast Guard Search & Rescue – 510-437-3700
Coast Guard San Francisco – 415-399-3479
Commercial Vessel Assistance – 1-800-367-8222

NOAA Weather Radio – 162.400 MHz, 162.425 MHz, 162.450 MHz, 162.475 MHz, 162.500 MHz, 162.525 MHz, 162.550 MHz.

Getting and Giving Help – Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

NOAA, The Nation's Chartmaker

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Official NOAA Nautical Charts – NOAA surveys and charts the national and territorial waters of the U.S, including the Great Lakes. We produce over 1,000 traditional nautical charts covering 3.4 million square nautical miles. Carriage of official NOAA charts is mandatory on the commercial ships that carry our commerce. They are used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters. NOAA charts are available from official chart agents listed at: www.NauticalCharts.NOAA.gov.

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Official PocketCharts™ – PocketCharts™ are for beginning recreational boaters to use for planning and locating, but not for real navigation. Measuring a convenient 13" by 19", they have a 1/3 scale chart on one side, and safety, boating, and educational information on the reverse. They can be purchased at retail outlets and on the Internet.

Official U.S. Coast Pilot® – The Coast Pilots are 9 text volumes containing information important to navigators such as channel descriptions, port facilities, anchorages, bridge and cable clearances, currents, prominent features, weather, dangers, and Federal Regulations. They supplement the charts and are available from NOAA chart agents or may be downloaded for free at www.NauticalCharts.NOAA.gov.

Official On-Line Chart Viewer – All NOAA nautical charts are viewable here on-line using any Internet browser. Each chart is up-to-date with the most recent Notices to Mariners. Use these on-line charts as a ready reference or planning tool. The Internet address is www.NauticalCharts.gov/viewer.

Official Nautical Chart Catalogs – Large format, regional catalogs are available for free from official chart agents. Page size, state catalogs are posted on the Internet and can be printed at home for free. Go to http://NauticalCharts.NOAA.gov/mcd/ccatalogs.htm.

Internet Sites: www.NauticalCharts.NOAA.gov, www.NOAA.gov, www.TidesandCurrents.NOAA.gov, www.NOS.NOAA.gov.